WHAT IS CLAIMED IS:

1. A method of reducing jitter in data transmission between a transmitter and a receiver, where the receiver has a phase-locked loop (PLL) with a loop bandwidth for recovering the clock and data from the transmitter, the method comprising the steps of:

measuring relative jitter between the recovered clock and the recovered data at the receiver; and

adaptively adjusting the PLL loop bandwidth of the receiver to reduce the relative jitter.

2. The method of claim 1, wherein said relative jitter is represented by the activity of a phase pointer indicating a correct data sampling point.

3. The method of claim 1, wherein the transmitter has a PLL for generating both the clock and the data.

4. The method of claim 1, wherein the transmitter has a PLL for generating the data.

5. A system for reducing jitter in data transmission between a transmitter and a receiver, where the receiver has a phase-locked loop (PLL) with a loop bandwidth for recovering the clock and data from the transmitter, the system comprising:

means for measuring relative jitter between the recovered clock and the recovered data at the receiver; and

means for adaptively adjusting the PLL loop bandwidth of the receiver to reduce the relative jitter.

6. The system of claim 5, wherein said relative jitter is represented by the activity of a phase pointer indicating a correct data sampling point.

7. The system of claim 5, wherein the transmitter has a PLL for generating both the clock and the data.

8. The system of claim 5, wherein the transmitter has a PLL for generating the data.

9. A method of reducing jitter in data transmission between a transmitter and a receiver, where the receiver has a phase-locked loop (PLL) with a loop bandwidth for recovering the clock and data from the transmitter, the method comprising the steps of:

measuring phase pointer activity where the phase pointer represents relative jitter between the recovered clock and the recovered data at the receiver; and

adaptively adjusting a characteristic of the receiver so as to reduce the phase pointer activity.

10. The method of claim 9, wherein said characteristic of the receiver includes the receiver PLL loop bandwidth.

11. The method of claim 9, wherein said phase pointer is selected from

oversampled points.

12. The method of claim 9, wherein said phase pointer is determined from a digital tracking pointer representing the phase changes of the received data.

13. The method of claim 9, wherein said phase pointer is determined from integration of the magnitude of AC component of a control voltage representing the phase changes of the received data.

14. The method of claim 9, wherein said phase pointer activity is measured as the absolute sum of the directional changes of the phase pointer.

15. The method of claim 9, wherein said phase pointer activity is measured as the frequency of the changes of the phase pointer.

16. The method of claim 9, wherein the transmitter uses a coherent clocking scheme where the transmitter PLL is used to generate the clock and the data.

17. The method of claim 9, wherein the transmitter uses an incoherent clocking scheme where the transmitter PLL is used to generate the data only.

18. The method of claim 9, wherein the transmitter PLL loop bandwidth changes depending on a video mode.

19. A system for reducing jitter in data transmission between a transmitter and a receiver, where the receiver has a phase-locked loop (PLL) with a loop bandwidth for recovering the clock and data from the transmitter, the system comprising:

means for measuring phase pointer activity where the phase pointer represents relative jitter between the recovered clock and the recovered data at the receiver; and

means for adaptively adjusting a characteristic of the receiver so as to reduce the phase pointer activity.

20. The system of claim 19, wherein said characteristic of the receiver includes the receiver PLL loop bandwidth.

21. The system of claim 19, wherein said phase pointer is selected from oversampled points.

22. The system of claim 19, wherein said phase pointer is determined from a digital tracking pointer representing the phase changes of the received data.

23. The system of claim 19, wherein said phase pointer is determined from integration of the magnitude of the AC component of a control voltage representing the phase changes of the received data.

24. The system of claim 19, wherein said phase pointer activity is measured as the absolute sum of the directional changes of the phase pointer.

25. The system of claim 19, wherein said phase pointer activity is measured as the frequency of the changes of the phase pointer.

26. The system of claim 19 wherein the transmitter uses a coherent clocking scheme where the transmitter PLL is used to generate the data and the clock.

27. The system of claim 19, wherein the transmitter uses an incoherent clocking scheme where the transmitter PLL is used to generate the data.

28. The system of claim 19, wherein the transmitter PLL loop bandwidth changes depending on a video mode

29. A method for receiving data by a receiver from a transmitter with reduced jitter where the receiver has a PLL for recovering data and clock from the transmitter, the method comprising the steps of:

tracking a phase pointer representing a relative jitter between the recovered data and clock;

measuring the activity of the phase pointer; and

adjusting the loop bandwidth of the receiver PLL based on the phase pointer activity measured.

30. The method of claim 29, wherein the step of tracking further includes the step of oversampling to produce oversampled points from which a phase pointer is selected.

31. The method of claim 29, wherein the phase pointer activity is measured in terms of the absolute sum of the directional change of the phase pointer.

32. The method of claim 29, wherein the phase pointer activity is measured in terms of the frequency of the phase pointer changes.

33. The method of claim 29, wherein data is encoded using Transition Minimized Differential Signaling (TMDS).

34. A system for receiving data from a transmitter with reduced jitter where the receiver has a PLL for recovering data and clock from the transmitter, the system comprising:

a phase-tracking unit for tracking a phase pointer representing a relative jitter between the recovered data and clock;

control logic for measuring the activity of the phase pointer to produce a control signal; and

a phase-locked loop (PLL) for recovering the clock, wherein the loop bandwidth of the PLL can be adjusted based on the control signal from the control logic.

35. The system of claim 34, wherein the phase tracking unit further includes an oversampling circuit for oversampling the received data to produce oversampled points from which the phase pointer is selected.

36. The system of claim 34, wherein the phase pointer activity is measured in terms of the absolute sum of the directional change of the phase pointer.

37. The system of claim 34, wherein the phase pointer activity is measured in terms of the frequency of the phase pointer changes.

38. The system of claim 34, wherein data is encoded using Transition Minimized Differential Signaling (TMDS).

39. A method of adaptively controlling the loop bandwidth of a receiver PLL to minimize the relative phase between the recovered data and clock where the receiver and the transmitter operate at substantially the same clock frequency, comprising the step of:

measuring phase pointer activity.

40. The method of claim 39, wherein the step of finding the DC component of the phase pointer activity and repeating the step of measuring if the magnitude of the DC component is above a predetermined limit.

41. The method of claim 39, further comprising the steps of:

incrementally changing the receiver PLL loop bandwidth;

measuring new phase pointer activity; and

calculating the difference between the new phase pointer activity and the old phase pointer activity.

42. The method of claim 41, further comprising the step of determining a local minimum if the difference is below a threshold.

43. The method of claim 42, further comprising the step of performing a scan by changing the receiver PLL loop bandwidth over a tunable range and measuring the phase pointer activity if the difference is equal or above a predetermined limit.

44. A method of adaptively controlling the loop bandwidth of a receiver PLL to minimize the relative phase between the recovered data and clock where the receiver and the transmitter operate at different clock frequencies, comprising the steps of:

measuring the phase pointer activity in DC and AC components; and

adjusting the phase pointer activity by compensating for the DC component of the phase pointer activity.

45. The method of claim 44, further comprising the steps of:

incrementally changing the receiver PLL loop bandwidth

measuring new adjusted phase pointer activity; and

calculating the difference between the adjusted the new phase pointer activity and the old phase pointer activity.

46. The method of claim 45, further comprising the step of determining a local minimum if the difference is below a threshold.

47. The method of claim 46, further comprising the step of performing a scan by changing the receiver PLL loop bandwidth over a tunable range and measuring the phase pointer activity if the difference is equal or above a predetermined limit.

48. A method of reducing jitter in data transmission between a transmitter and a receiver, where encoding is used for the data transmission, and the receiver has a phase-locked loop (PLL) with a loop bandwidth for recovering the clock and data from the transmitter, the method comprising the steps of:

measuring an error rate at the receiver; and

adaptively adjusting the PLL loop bandwidth of the receiver to reduce the error rate.

49. The method of claim 48, wherein said step of measuring further comprising the steps of:

comparing a received encoded character with a set of predefined out-of-band (OOB) characters; and

detecting an error if the encoded character is the same as any OOB character.

50. The method of claim 49, wherein the data encoding uses TMDS coding.